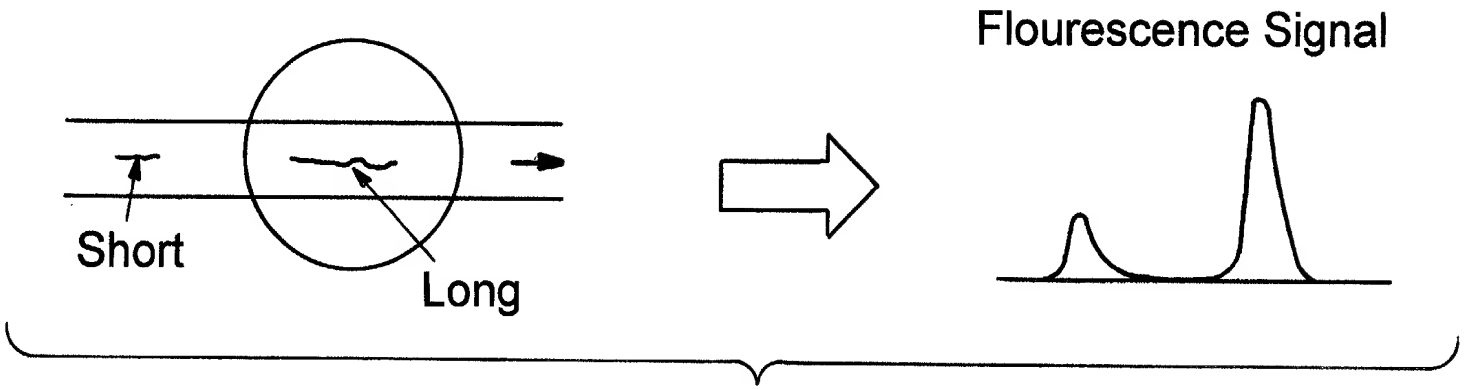

Fig. 1A

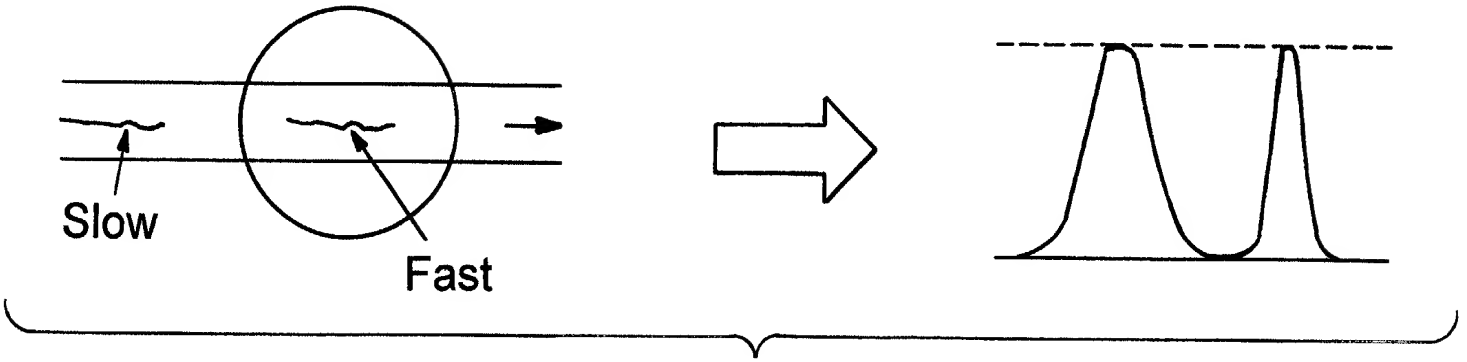

Fig. 1B

VIM - system

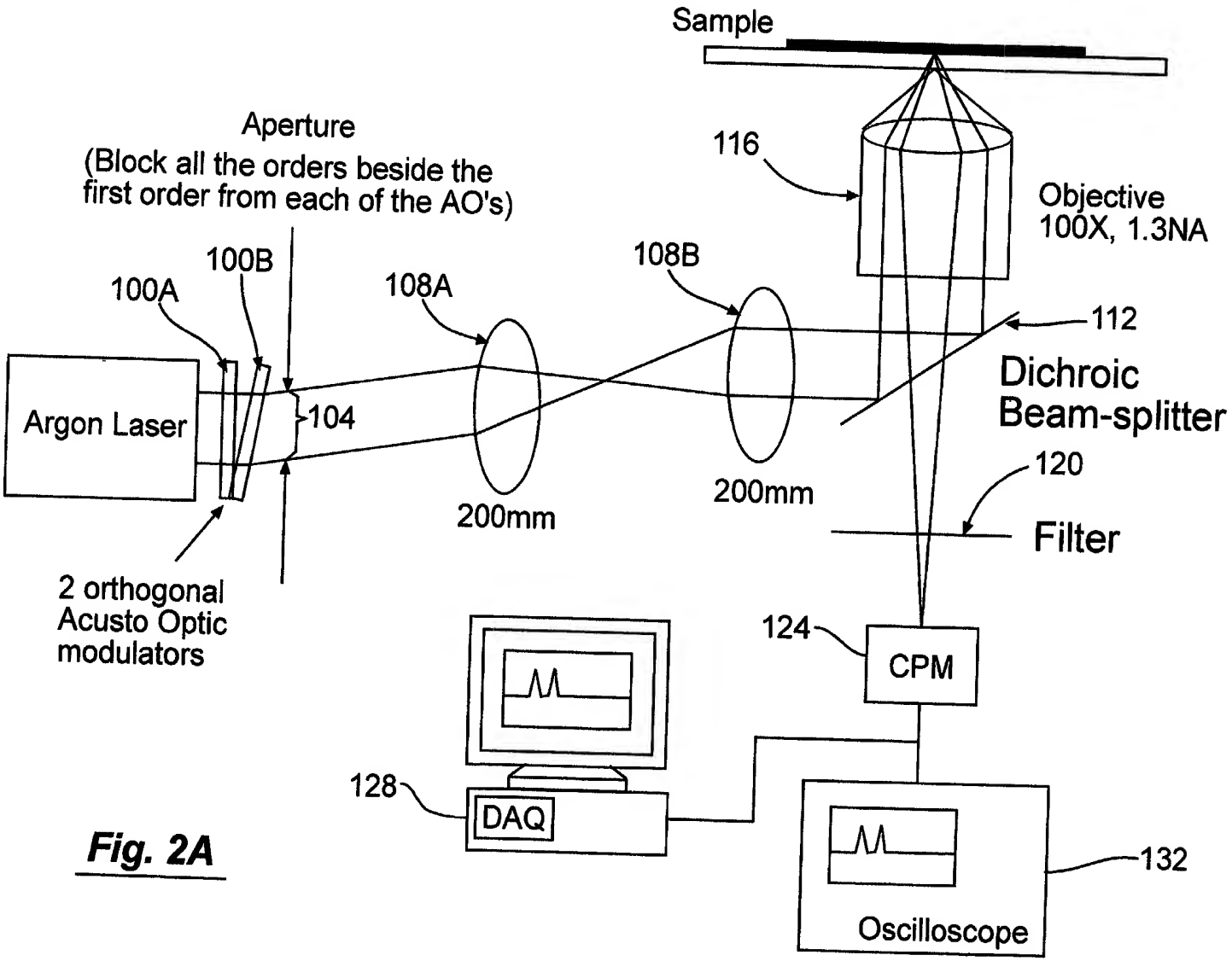

Fig. 2A

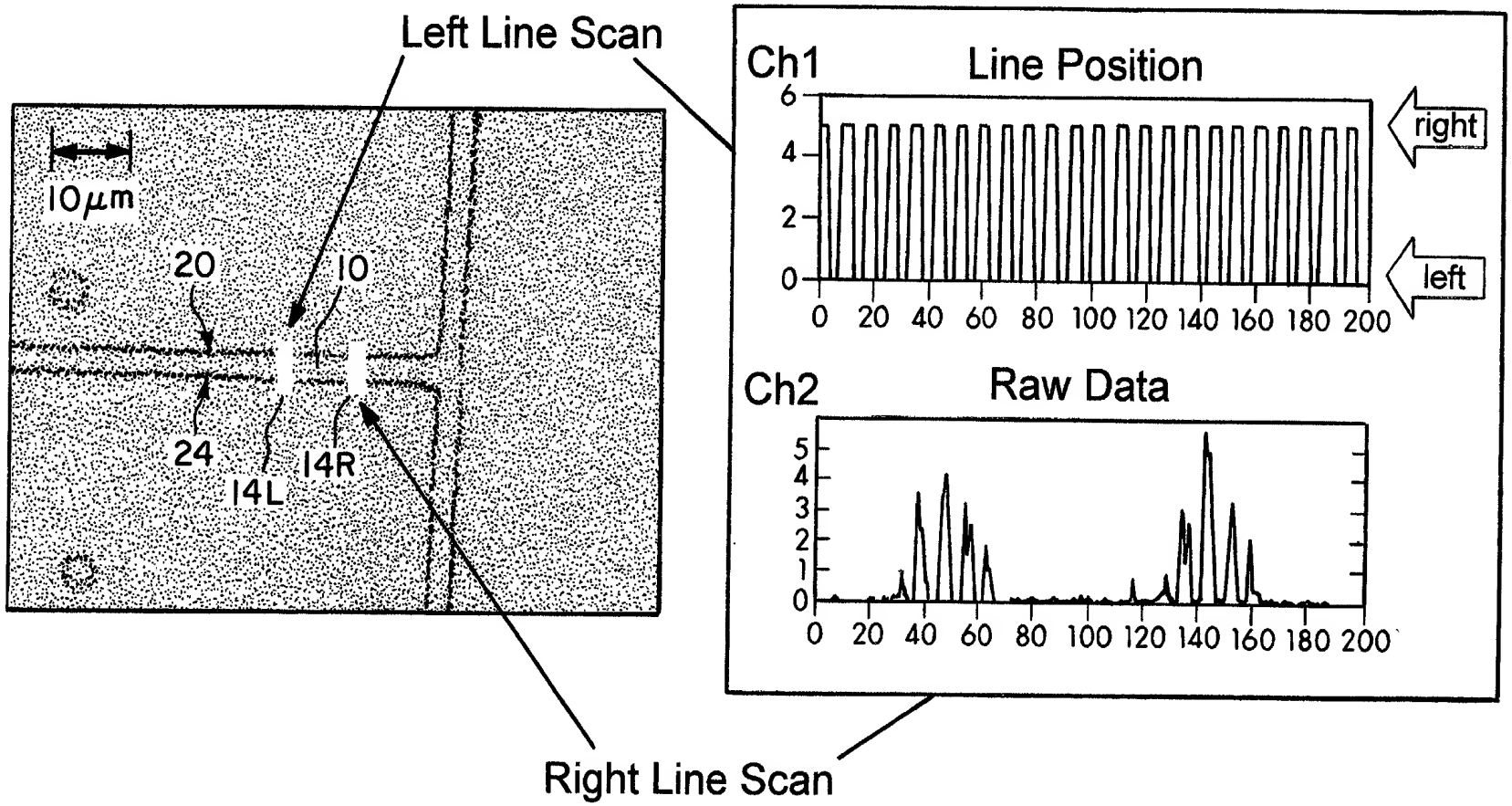
Left Line Scan
10μm
20
10
24
14L
14R
Ch1
Line Position
6
4
2
0
right
left
0 20 40 60 80 100 120 140 160 180 200
Ch2
Raw Data
5
4
3
2
1
0
0 20 40 60 80 100 120 140 160 180 200
Right Line Scan

Fig. 2B

The beam after the two Acusto Optics Modulators

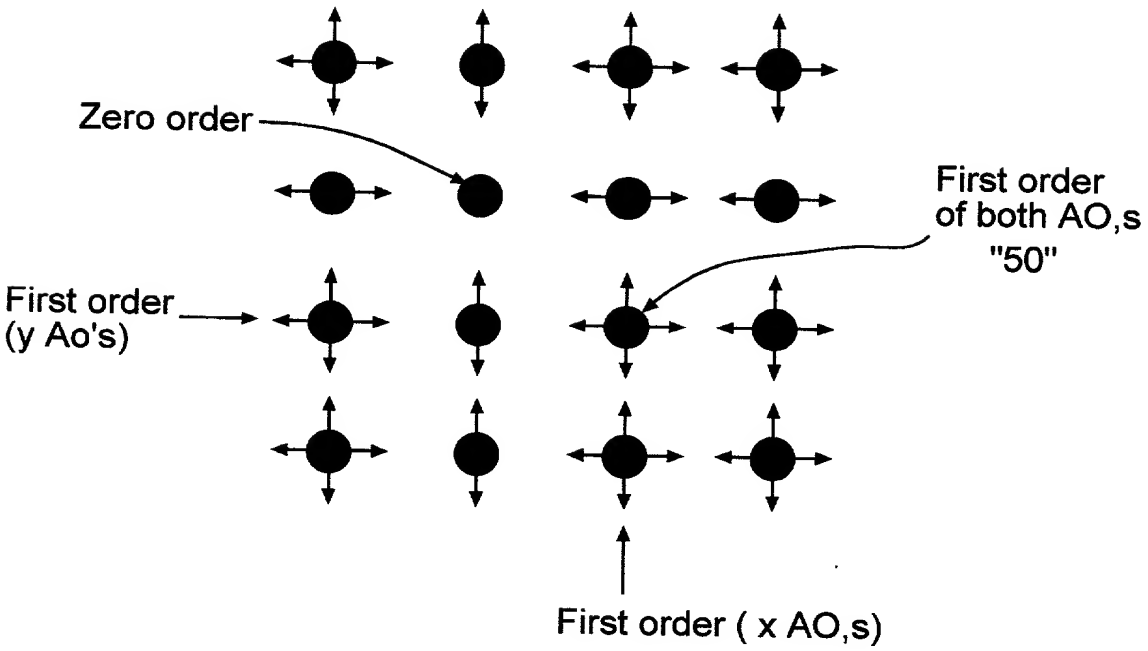

Fig. 2C

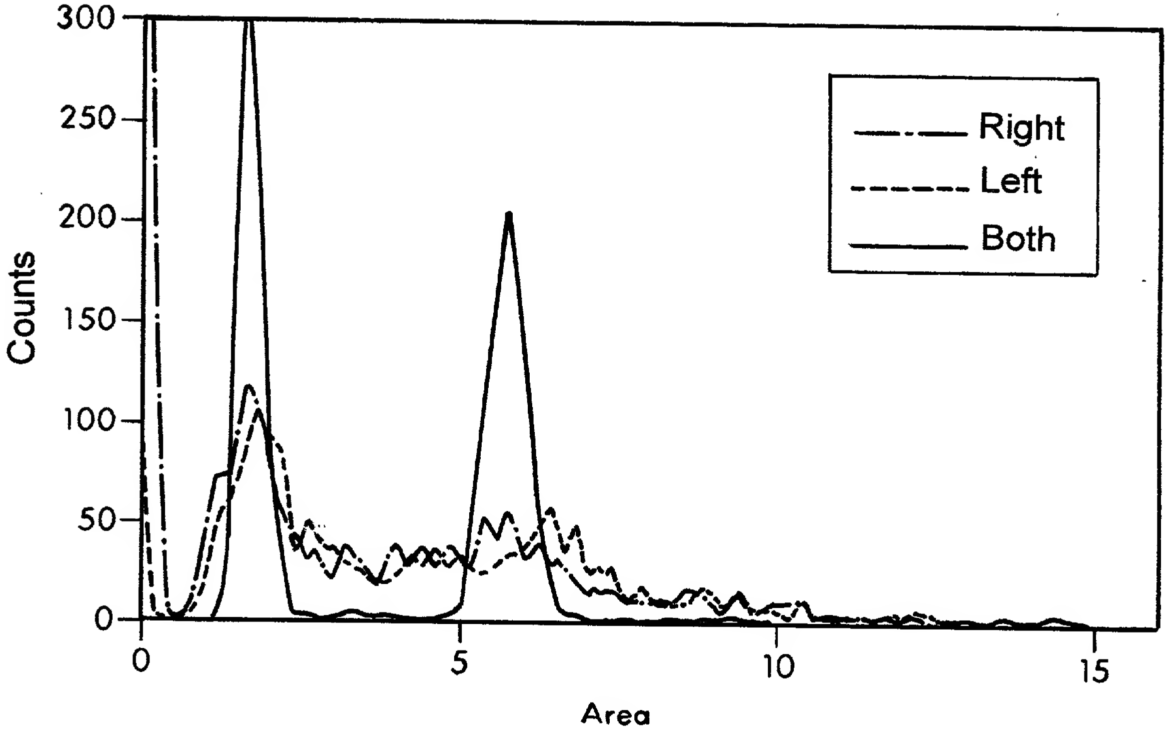
300
250
200
150
100
50
0
Counts
0
5
10
15
Area
Right
Left
Both

Fig. 3

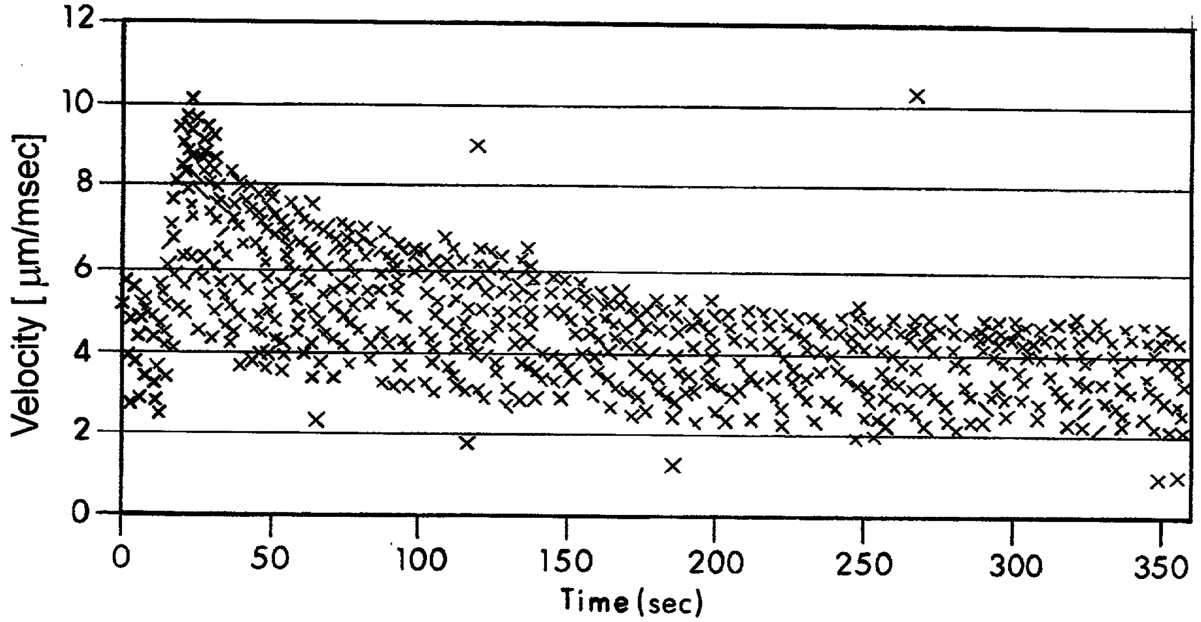
12
10
8
6
4
2
0
Velocity [µm/msec]
0
50
100
150
200
250
300
350
Time (sec)

Fig. 4

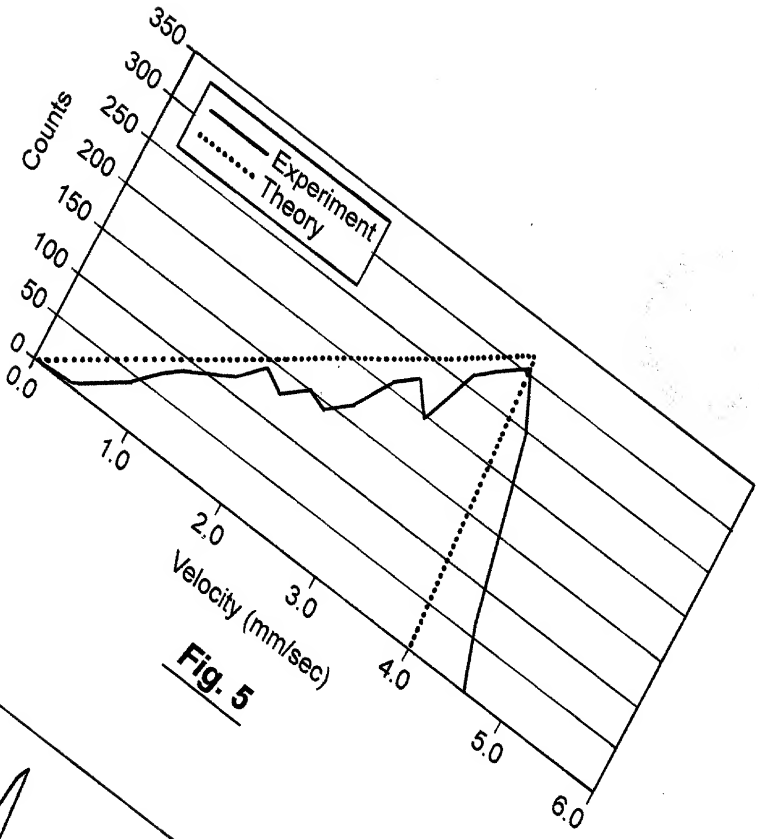
350
300
250
200
150
100
50
0
Counts
Experiment
Theory
0.0
1.0
2.0
3.0
4.0
5.0
6.0
Velocity (mm/sec)

Fig. 5

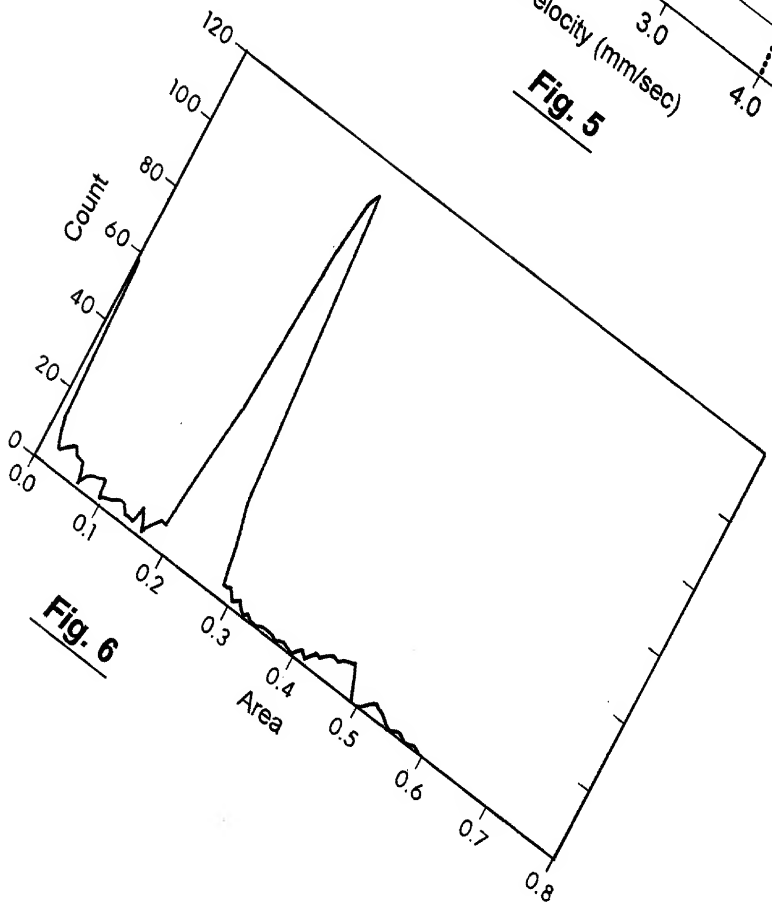
120
100
80
60
40
20
0
Count
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
Area

Fig. 6

ChDiv

Input - two vectors: Y(i) - channel 1 - square wave - chopping signal, 0<=Yi<=1 X(i) - channel 2 - flourescence raw data - from the detecting region (both line scan) — Usually Sampled at 40KHz

Output - two vectors: OutRight(j) - flourescence from Right Line scan OutLeft(j) - flourescence from Left Line scan — Usually Sampled at 5KHz

The sampling rate of the output channels allways equals the frequency of the chopping signal

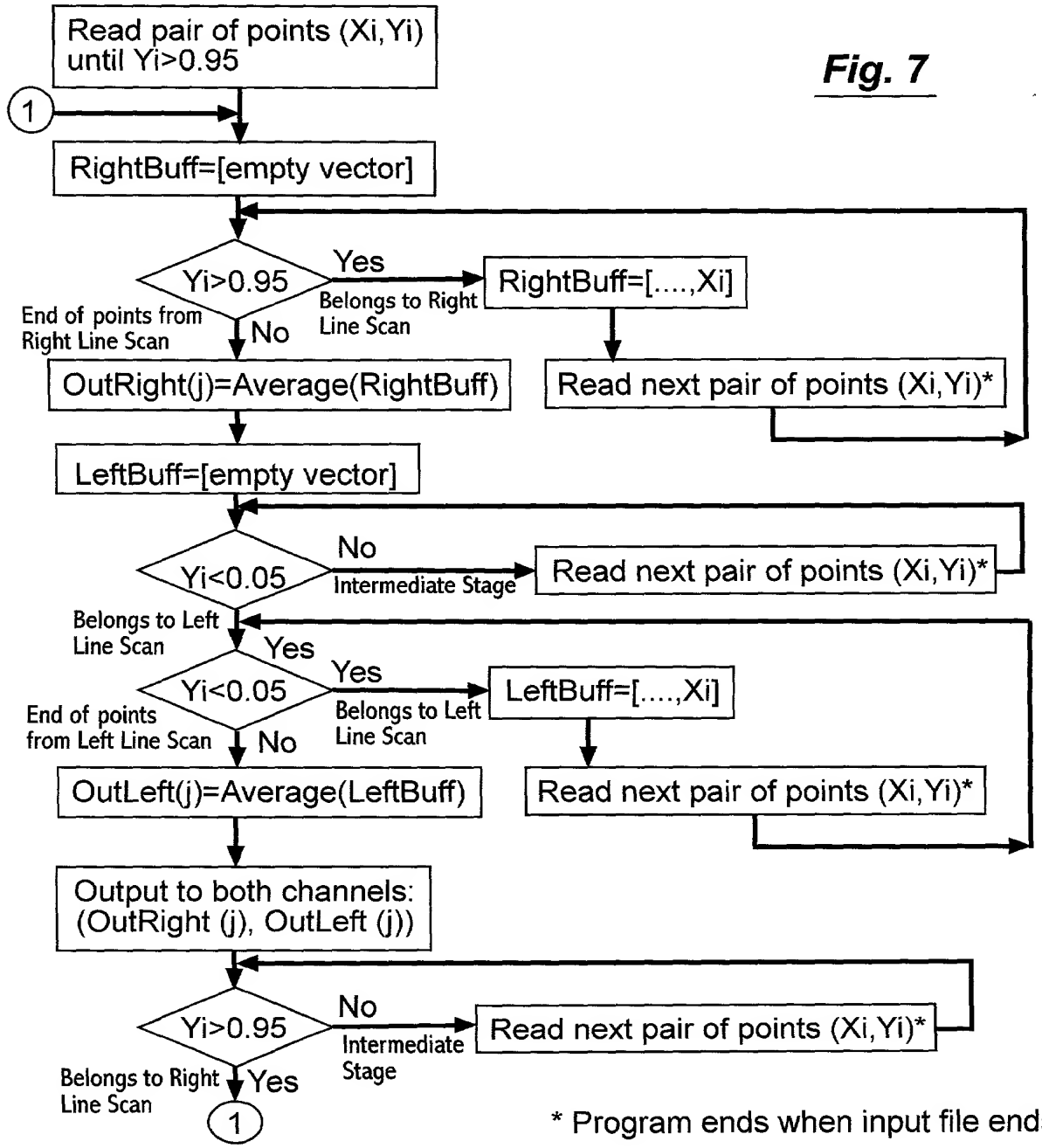

Fig. 7

* Program ends when input file ends

ArV1Analyzer

Input: two files (one for each line scan).
Each file contain 2 vectors one of the Positions (P(i)) and the other has the corresponding Area (A(i))

Output: three vectors - Area, TimeDiff (inversely proportional to velocity), Position

Position Parameters that can be determined - MinTimeDiff, Mas/timeDiff

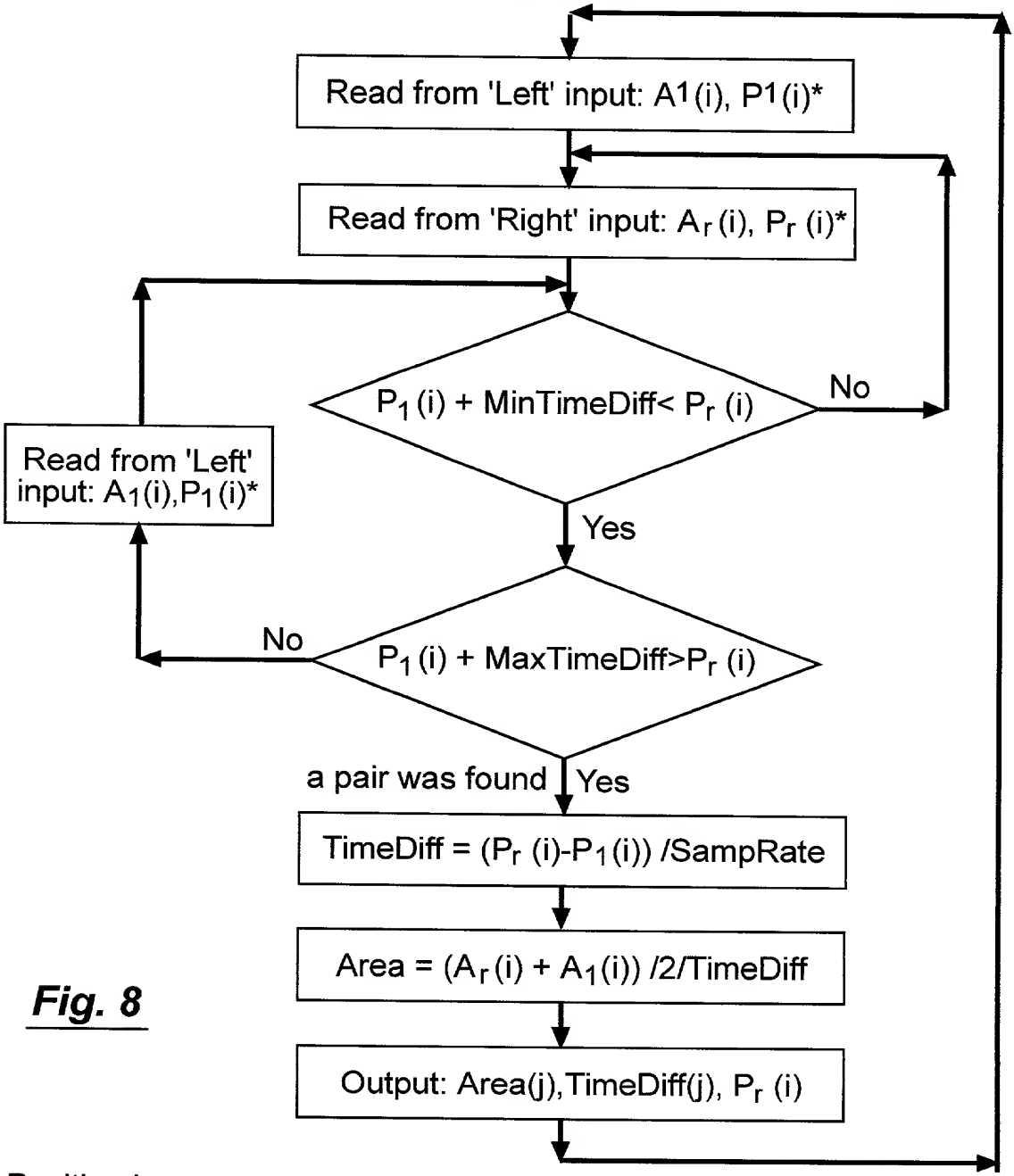

Fig. 8

Position is presented in point number and not time
TimeDiff is in Seconds and is inversely proportional to the velocity
*Program ends when one of the input files ends